ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

List of Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the Federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Reporting responsibilities of waste Dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383 and 13387(b) of the California Water Code and this Regional Water Board's Resolution No. 73-16.

B. The principal purposes of a monitoring program by a waste Discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by the Regional Water Board, (2) to facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

C. Sampling is required during the entire year when discharging. All analyses shall be conducted using current USEPA methods that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits and to perform reasonable potential analysis. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer following consultation with the State Water Resources Control Board's Quality Assurance Program.

D. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

E. Written reports, strip charts, calibration and maintenance records, and other records shall be maintained by the Discharger and accessible and retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Water Board or Regional Administrator of the U.S. Environmental Protection Agency, Region IX. Such records shall show the following for each sample:

1. Identity of sampling and observation stations by number.
2. Date and time of sampling and/or observations.
3. Method of sampling.
4. Full report for rainbow trout bioassay test (96-hour static bioassay renewal).
5. Date and time that analyses are started and completed, and name of personnel performing the analyses.
6. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to a specific section of Standard Methods (SM) or the standard USEPA method number is satisfactory.
7. Calculations of results.
8. Results of analyses and/or observations.

F. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include a formal request to invalidate the measurement, the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.), and discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Water Board staff and will be based solely on the documentation submitted at that time.

G. A tabulation reflecting bypassing and accidental waste spills shall be maintained.

H. A copy of this Order, a complete copy of the Notice of Intent filed, documentation of the authorization to discharge received from the Regional Water Board, a full copy of the O&M Manual, and any other documents relevant to the operation and maintenance of the treatment facility shall be stored at or near the treatment facility. These documents help the Dischargers' staff responsible for compliance assurance activities and shall be made available to Regional Water Board staff during inspections. The Dischargers' staff responsible for compliance assurance activities shall inspect the Facility as frequent as required by the O&M Manual.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order.

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
Effluent	M-001 through M-"n" (E-xx[2])	At any point in the outfall between the point of discharge to the receiving water(s) and the point at which all waste tributary to that outfall is present. If the effluent first discharges into a separate storm drain system, the sampling point for compliance purpose shall be the point at which all waste tributary to the outfall and before commingling with the water in the storm drain.
Receiving Waters[1]	R-001(A,B,C,…) (CB-XX[2])	At a point in the receiving water and located upstream of the discharge point where impacts from the discharge would not be expected[3].
	R-002(A,B,C,…) (C-XX[2])	At a point in the receiving water on the edge of the mixing zone[3]; or if mixing zone cannot be determined, within 50 feet downstream of the discharge outfall.

Footnotes for Table E-1:

(1) If there is only one discharge outfall, the name R-001 or R-002 should be used. Otherwise, R-001A and R-002A for discharge point 001, R-001B and R-002B for discharge point 002, and so on are used for multiple discharge locations.

(2) The names in the parenthesis are those used in the previous General Permit.

(3) The Discharger can determine the exact receiving water sampling locations if a mixing zone can be determined based on a previous study.

III. REQUIRED EFFLUENT SAMPLING, ANALYSES AND OBSERVATIONS

Effluent monitoring is only required when discharging to the receiving waters. The schedule of effluent sampling, analysis and observation shall be that given in Tables E-2 through E-4 below.

Table E-2. Schedule of Sampling, Analysis, and Observations for Aggregate Mining Facilities

Parameter	Units[1]	Sample Type[2]	Minimum Sampling Frequency[3]
Flow Rate and volume[4]	MGD/MG	Continuous or daily	1/day
Total settable matter	mL/L/hr	Grab	1/week
Total Dissolved solids	mg/L	Grab	1/week
Chloride	mg/L	Grab	1/week
Total Suspended Solids	mg/L	C-24	1/week
Total Chlorine Residual[5]	mg/L	Grab	1/week
Turbidity	NTU	Grab	1/week
pH	s.u.	Grab	1/week
Oil and grease	mg/L	Grab	1/month
Acute Toxicity[6]	% survival	C-24	2/year
Arsenic Mercury[7]	µg/L	Grab or C-24 as specified by testing method	Quarterly for first year of operation under this Order and if not triggered twice per year thereafter

Parameter	Units[1]	Sample Type[2]	Minimum Sampling Frequency[3]
Other pollutants that may be present in the influent and/or effluent[8]	µg/L	Grab or C-24 as specified by testing method	[9]
All other Table 5 pollutants not listed above[10]	µg/L	Grab or C-24 as specified by testing method	1/5 years
Standard Observations[11]		--	1/day when operating (discharging)

Table E-3. Schedule of Sampling, Analysis, and Observations for Marine Sand Washing Facilities

Parameter	Units[1]	Sample Type[2]	Minimum Sampling Frequency[3]
Flow Rate and volume[4]	MGD/MG	Continuous or daily	1/day
Total settable matter	mL/L/hr	Grab	1/week
Turbidity	NTU	Grab	1/week
Total Chlorine Residual[5]	mg/L	Grab	1/week
pH	s.u.	Grab	1/week
Oil and grease	mg/L	Grab	1/month
Acute Toxicity[6]	% survival	C-24	2/year
Copper	µg/L	C-24	1/quarter
Mercury[7] Zinc	µg/L	Grab or C-24 as specified by testing method	Quarterly for first year of operation under this Order and if not triggered twice per year thereafter
Other pollutants that may be present in the influent and/or effluent[8]	µg/L	Grab or C-24 as specified by testing method	[9]
All other Table 5 pollutants not listed above[10]	µg/L	Grab or C-24 as specified by testing method	1/5 years
Standard Observations[11]		--	1/day when operating (discharging)

Table E-4. Schedule of Sampling, Analysis, and Observations for Sand Offloading Facilities

Parameter	Units[1]	Sample Type[2]	Minimum Sampling Frequency[3]
Flow Rate and volume[4]	MGD/MG	Continuous or daily	1/day
Total settable matter	mL/L/hr	Grab	1/week
pH	s.u.	Grab	1/week
Oil and grease	mg/L	Grab	1/month
Standard observation[11]	---	---	1/day when operating (discharging)

Footnotes for Tables E-2, E-3, and E-4:

(1) Unit Abbreviations
MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter

ml/L/hr = milliliters per liter, per hour
s.u. = standard units

(2) Sample Type
Continuous = measured continuously, and recorded and reported daily

C-24 = 24-hour composites may be made up of discrete grabs collected over the course of a day and volumetrically or mathematically flow-weighted. Samples for inorganic pollutants maybe combined prior to analysis. At least one sampling day in each week shall reflect one day of peak loading and during major unit operation shutdown or startup. If the facility discharges intermittently, then grab samples may be used instead of C-24 samples.

Grab = Grab samples of effluent shall be collected during periods of maximum peak flows (if flows vary during the day) and shall coincide with effluent composite sample days.

Samples shall be taken on random days.

(3) Minimum sampling frequency.
If two consecutive samples of a constituent monitored on a weekly (2/week) or monthly basis in a 30-day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.

If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

(4) Flow Monitoring.
Flows shall be monitored at each discharge outfall by flow meters or estimated if no flow meter is in place and the following shall be reported in self-monitoring reports:
a. Daily total flow volume (MG).
b. Discharge duration during a day, in hours.
c. Daily average flow rate (MGD), if not measured directly, calculated using a. and b. data above. If duration is not recorded, specify averaging period, i.e., 24 hours vs. estimated discharging hours.
d. Monthly total flow volume (MG).
e. Discharge days during a month.
f. Average daily maximum and average daily minimum flow rates (MGD) of discharge days (i.e., do not report zero) in a month.

Flows discharge through all authorized outfalls shall be reported, this includes all wastewater and storm water.

Some discharge points are not equipped with flow meters or only controlled by a weir; flows can be estimated in this case to the best knowledge of the operator. The Discharger may request to waive some of the flow monitoring parameters to the Executive Officer (e.g., b, c, f, above). The Executive Officer may also require the Discharger to install flow meters during the permit term.

(5) Total chlorine residual is only required for facilities using municipal water supply as wash water.

(6) Acute Toxicity monitoring (96-hour static renewal bioassay test). The test shall be performed according to Section IV below.

(7) Mercury. The Discharger shall use ultra-clean sampling methods (USEPA 1669) to the maximum extent practicable and ultra-clean analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as USEPA 245) if that alternate method has a method detection limit (MDL) of 0.0002 µg/L or less.

(8) Priority pollutants are those pollutants identified as Compound Nos.1–126 by the California Toxics Rule at 40 CFR 131.38.

(9) The Regional Water Board Executive Officer may determine during the permit term that specific pollutants of concern may be present in the discharge. The Executive Officer will require the Discharger to sample for these pollutants after such determination is made. The sampling frequency may be twice per year for three years and, if not triggered, once per year thereafter.

(10) Table 5 refers to Triggers for Accelerated Monitoring and Additional Investigation.

(11) Standard observations include both receiving water and wastewater discharge:

a. Receiving Water:
   i Floating and suspended materials of waste origin (to include oil, grease, algae, and other macroscopic particulate matter, presence or absence, source, and size of affected area.
   ii. Discoloration and turbidity: description of color, source, and size of affected area.
   iii. Depth of water columns and sampling depths.

b. Weather conditions:
   i. Air temperatures;
   ii. Total precipitation during the previous five days and on the day of observation if there are meteorological stations on site.

c. Wastewater Effluent: Floating and suspended material of waste origin (to include oil, grease, sand, and other macroscopic particulate matter): presence or absence, source, and size of affected area.

IV. WHOLE EFFLUENT ACUTE TOXICITY TESTING REQUIREMENTS

Compliance with the whole acute toxicity requirements of this Order shall be achieved in accordance with the following:

1. Acute toxicity of effluent limits shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.

2. Test species shall be the current species or a species approved by the Executive Officer.

3. All bioassays shall be performed according to 40 CFR 136, currently the “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,” 5th Edition (EAP-821-R-02-012). Exceptions may be granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

4. If specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.

5. Effluent used for fish bioassays must be dechlorinated prior to testing if there is chlorine residual in the effluent. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is

observed), temperature, hardness, and alkalinity. These results shall be reported. If the fish survival rate in the effluent is less than 70 percent or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated.

6. The Discharger may indicate in the NOI the previous approvals by the Executive Officer and request for re-confirmation, e.g., testing species, renewal interval, etc. The Discharger may continue its current practice as long as a new method (currently the 5th edition method) allows such a variation.

V. LAND DISCHARGE MONITORING REQUIREMENTS

Not applicable.

VI. RECLAMATION MONITORING REQUIREMENTS

Not applicable.

VII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Surface Water Monitoring at R-001(A, B, C,..) through R-"n"

The Discharger shall monitor both upstream and downstream of discharge outfall according to Table E-5 below:

Table E-5. Receiving Water Monitoring Requirements (1,5,6)

Parameter	Units(2)	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L and % saturation	Grab	1/month
Turbidity	NTU	Grab	1/month
pH	s.u.	Grab	1/week
Total Dissolved Solids(3)	mg/L	Grab	1/week
Chloride(3)	mg/L	Grab	1/week
Temperature	°C	Grab	1/month
Hardness(4)	mg/L as $CaCO_3$	Grab	1/month
Salinity(4)	ppt	Grab	1/month

Footnotes for Tables E-5

(1) a. Receiving water samples shall be collected on days coincident with effluent sampling.

b. Receiving water samples shall be collected at each station on each sampling day during the period within 1 hour following low slack water. Where sampling at lower slack water period is not practical, sampling shall be performed during higher slack water period. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated.

c. Samples shall be collected within one foot below the surface of the receiving water body, unless otherwise stipulated.

(2) Unit Abbreviations
s.u. = pH standard unit
mg/L = milligrams per liter
ppt = parts per thousand

(3) Total dissolved solids is only required for discharges into fresh water bodies supporting municipal water supply or groundwater recharge.

(4) Salinity and hardness monitoring is only required for discharges into fresh and estuarine water bodies.

(5) For discharges directly into an estuarine wetland and therefore would have access difficulty for receiving water sampling, the Discharger may request to the Executive Officer in its NOI an exemption from receiving water monitoring.

(6) Receiving water monitoring is not required when there are no natural flows in the receiving water body; however, the Discharger may take samples at a nearby location at its discretion and indicated the new location in the self-monitoring report.

B. Receiving Water Priority Pollutants Sampling

The Discharger shall sample its receiving water for all pollutants listed in Table 5 of the Order (facilities with Type I triggers are required to sample for the pollutants with triggers based on MCLs). The sampling is required for at least once during the permit term. The Discharger shall submit the results 180 days prior to permit expiration with the NOI.

C. Groundwater Monitoring.

Not applicable.

VIII. LEGENDS FOR TABLES

Sampling Frequency		Legend
1/day	=	Once per day
1/week	=	Once per week
1/month	=	Once per month
1/quarter	=	Once per quarter
1/5 years	=	Once every five years

IX. OTHER MONITORING REQUIREMENTS

Not applicable.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (**Attachment D**) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.

2. **Quarterly Reports.** The Discharger shall submit **quarterly** Self Monitoring Reports including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Quarterly reports shall be due 30 days after the end of each quarter.

3. **Annual Reports.** By February 1 of each year, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall include both tabular and graphical summaries of the monitoring data during the previous year and a comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements

4. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Effective date of permit	All
1/day	Effective date of permit	Daily
1/week	Effective date of permit	Once per week
1/month	Effective date of permit	Once per calendar month
1/quarter	Effective date of permit	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
2/year	Effective date of permit	Once during wet season (normally during November 1 through April 30), once during dry season (normally during May 1 through October 31)
1/year	Effective date of permit	January 1 through December 31, alternate between once during dry season (normally May 1—October 31), once during wet season (normally November 1—April 30)
1/5 years	Effective date of permit	Once during the permit term

5. The Discharger shall report with each sample result the applicable Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (±a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. The Dischargers shall instruct laboratories to establish calibration standards so that the RL value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. The Discharger shall not use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

6. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations.

7. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

8. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (**Attachment D** and **G**), to the address listed below:

   Executive Officer
   California Regional Water Quality Control Board
   San Francisco Bay Region
   1515 Clay Street, Suite 1400
   Oakland, CA 94612
   ATTN: NPDES Wastewater Division

9. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The Electronic Reporting System (ERS) format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any

discrepancies between the ERS requirements and the "hard copy" requirements listed in the MRP, then the approved ERS requirements supercede.

C. Discharge Monitoring Reports (DMRs)

1. As described in Section XI.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to one of these addresses listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format as EPA Form 3320-1.

D. Other Reports

Not applicable.